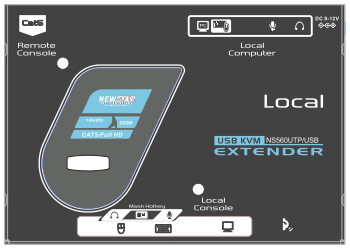

NS560UTP/USB

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Please read this manual thoroughly and follow the **Installation** procedures to prevent any damage to the unit or any connecting device

∗ *To prevent damages to your installation, it is important that all devices are properly grounded.*

FC CE VCI RoHS

Introduction

Overview

KVM Extender consists of a **Console Unit** and a **Computer Unit** allowing you to extend the keyboard-monitor-mouse console up to **200 meters** away from a source computer or **KVM Switch** by using an inexpensive **Category 5 / 5e / 6 UTP** (unshielded twisted pair) **cable**. The **Extender** supports high video resolution up to **Full HD (1920 x 1080) / WUXGA (1920 x 1200) / 1920 x 1440**. Through the easy hotkey commands, you can conveniently adjust the video quality to compensate the cable lengths and synchronize the optimal video resolution between the attached computers, such as equalizer (sharpness), gain (brightness), and zero the skew delay for green, blue, and red. It is economical and scalable design for growth-oriented enterprises, which you can easily expand the multiple computer controls by adding additional **Extender**(s) or cascading the **Extender**(s) with **KVM Switch**(es) whenever you need.

The dedicated **Hotkey Mask** feature eliminates all the hotkey control barriers caused by mixed combinations of **KVM Switch**(es) in cascading environments. The **Extender** can mask up itself through the hotkey mask, enabling you to bypass the cascaded **Extender** level and directly configure the cascaded **KVM Switch** by using the keyboard/mouse that connect to the **Extender Unit**, as if you are virtually sitting in front of the **KVM Switch**.

The interface compatibility and flexibility can be simply enhanced by choosing custom-made KVM cable(s) for your existing PS/2 or USB computer(s). It provides advanced features including dual-user access, LED indicators for real-time status monitoring, serial interface for serial equipments and data communications, audio jack (speaker + Mic) for audio display. With the small footprint, the **Extender** can be easily installed and deliver the high definition signal over long distance, which is a perfect solution for factories or construction areas where you want to secure your computers and valuable data or manage them both in remote and local sites.

The **Extender Unit** can be connected with 1-to-3 or 1-to-2 cable(s) as the following figure shown. For details, please proceed to the section "**Specifications**".

Connection of 1-to-3 and 1-to-2 cable

Features

- Remotely locate the keyboard, mouse and monitor up to 200 meters away from a computer
- Support high video resolution up to 1920 x 1200 (WUXGA)
- Support USB console
- Ability to extend IR control
- Support the HID standard keys
- Equalizer (sharpness) / gain (brightness) adjustment via hotkeys for optimal video quality
- Unique RGB skew adjustment via hotkeys for the best video quality
- Synchronize the video resolution via hotkeys
- EDID Emulation function makes the best resolution for your application
- Easily expand the multiple computer controls by cascading KVM Switch(es)
- Hotkey functions and push button for easy computer access
- **Mask Hotkey** function enable the direct control in cascading
- Compatible with all PS/2 or USB computers by using 1-to-3 (PS/2 interface) or 1-to-2 (USB interface) KVM cable(s)
- LED indication makes operation user-friendly
- Locate the computer away from your desk and work area, saving you valuable space
- Allow two users to share computer(s) both in local and remote areas
- Beep confirmation for hotkey control makes the operation easier and cross-checked
- Compatible with most of the popular screen resolution to XGA, SXGA, UXGA, WSXGA, ...WUXGA system
- Serial communication function (optional):
  1. Fully compatible with all RS-232 protocols allowing full range of baud rates to be used
  2. Full-Duplex data communication
  3. Real-Time pure hardware solution
  4. Extend serial transmission up to 115,200 bps (maximum)

Packing Checklist

1.	KVM Extender **Console Unit**	x 1
2.	KVM Extender **Computer Unit**	x 1
3.	Power Adapter with necessary AC Cord or Plug-in Power Adapter	x 2
4.	CD with User's Manual	x 1
5.	Quick Start Guide	x 1
6.	Foot Pad Set	x 2
7.	Ground Wire	x 2
8.	KVM Cable	x 1
9.	Audio Cable for Computer (PC) Side	x 1

Optional:

IR External Sensor (Transceiver+ Receiver) Kit

1. External Sensor 2. Multi-mode Stand 3. Metal Plate 4. Screws

Transceiver Receiver

System Requirements

System Requirements

1. Computer(s) with USB port(s) or PS/2 port(s)
2. USB keyboard / mouse for console controlling
3. Suitable ground object for system grounding

You will need...

1. VGA Cable & Audio Cable
2. Category 5 / 5e / 6 UTP cable (EIA/TIA 568B industry standard compliant) in accordance with length limits for optimum signal integrity

Product Description

Console (Remote)

Console Side	R1	Video Connector	Connect to the monitor
	R2	USB Connectors	Connect to the mouse
	R3		Connect to the keyboard
	R4	Audio Jack	Connect to Speakers and MIC
	R5	Mask Hotkey Switch	OFF (right): Standard mode ON (left): Disable the Extender hotkey function
	R6	RJ-45 Jack	Use CAT5 cable for the extender connection
	R7	IR Control Jack	Plug the external sensor (Transceiver) here
	R8	Ground	System grounding

NOTE: For details about LEDs, please refer to *LED Indicators* chapter.

Product description

Computer (Local) Unit

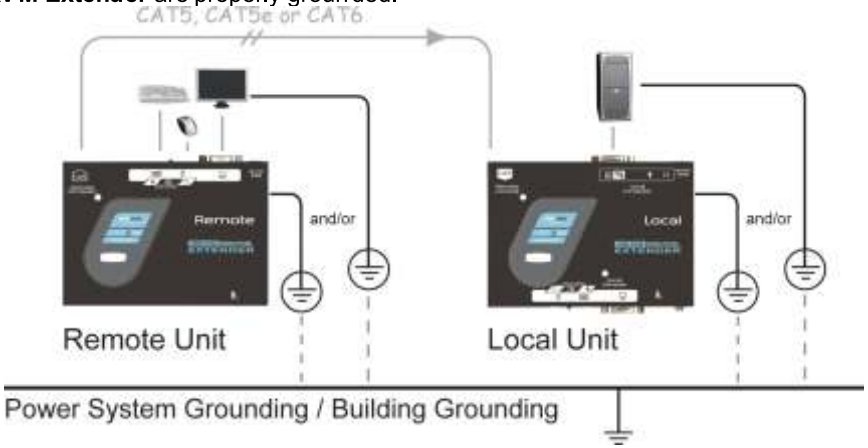
Console Side	L1	Video Connector	Connect to the monitor
	L2	USB Connectors	Connect to the mouse
	L3		Connect to the keyboard
	L4	Audio Jack	Connect to Speakers and MIC
	L5	Mask Hotkey Switch	OFF (right): Standard mode ON (left): Disable the Extender hotkey function
PC Side	L9	Computer Connection	Use KVM cable for PC connection
	L10	Audio Jack	Connect to PC's audio port
	L6	RJ-45 Jack	Use CAT5 cable for the extender connection
	L7	IR Control Jack	Plug the external sensor (Receiver) here
	L8	Ground	System grounding

NOTE: For details about LEDs, please refer to *LED Indicators* chapter.

Installation

Grounding

To prevent any damage to the product or any connected device, it is important to make sure that both the monitor (and/or computer) connected to the **Unit** and the **KVM Extender** are properly grounded.



Cautions:

1. Prior to the installation, ensure that all devices to be connected to this system are powered off and grounded.
2. Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

1-to-3 cable (PS/2) connection

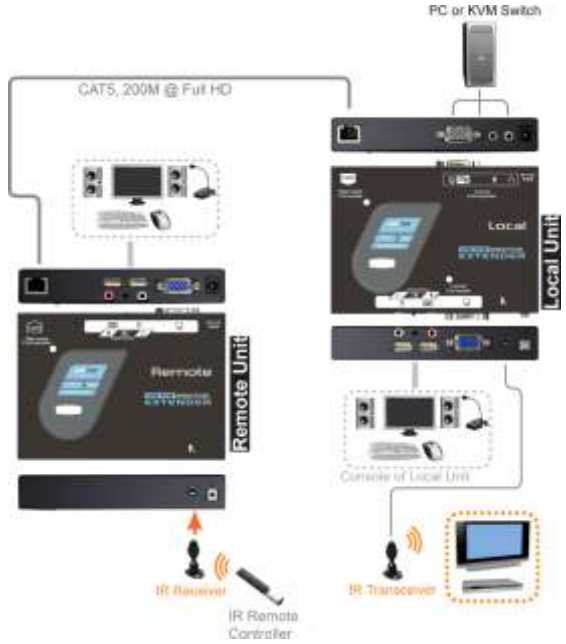
1-to-2 cable (USB) connection

Installation

Connection Patterns

The installation is as easy as dynamically connecting the computer to the **Local Unit** and/or **Remote Unit**, and connecting the **Local Unit** to the **Remote Unit** with the appropriate CAT5 cable. Please follow the guidelines below for the system connection.

- Use KVM 1-to-3 (PS/2 interface) or 1-to-2 (USB interface) cable for the connection between the video port on the computer side of the **Extender** and the video output port & KB/MS port of the connected **Computer**.
- If needed, use a set of audio cable to connect the speaker port, microphone port between the **Extender** and **Computer**.

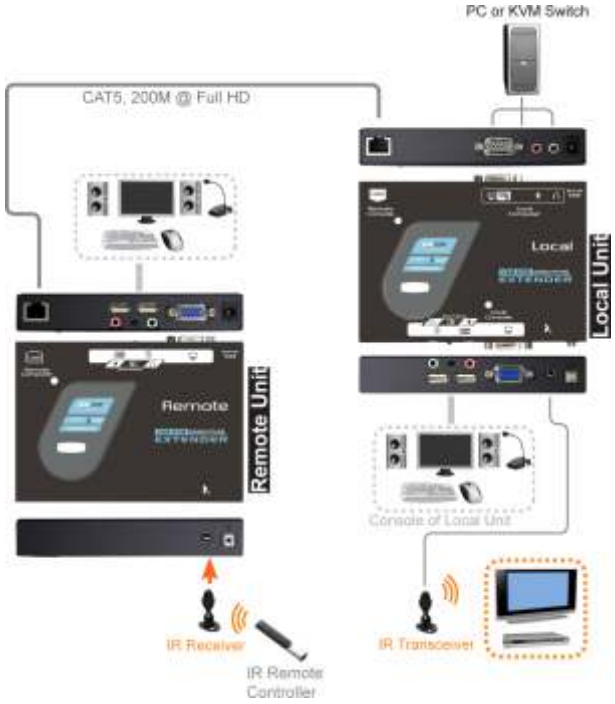


- Use VGA cable for the connection between the video port on the console side of the **Unit** and the video port of the connected monitor.
- Plug a USB keyboard and a USB mouse into the respective icon marked USB ports on the console side of the **Unit**.
- If needed, plug a set of audio jack from speaker and microphone into the Unit's speaker port and microphone port respectively.

Installation

Power Connection

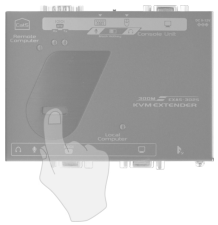
- After all device connections are completed, connect the provided power cord into an appropriate power source and plug the opposite end into the power connector on the **Unit** to power up the system.

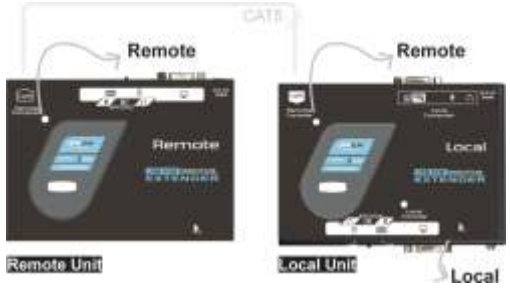


Led Indicators

The LEDs on the **KVM Extender** show the real-time status indicating the linking, communication, and control between the **Computer Unit** and **Console Unit**. Users can switch control through the push-button and identify the present status through the LED indicator on the top panel as the following lists:

1. Press the push-button on **Console Unit** to select “Local On” or “Remote On”.
2. Press the push-button on **Computer Unit** to select “Local On”, “Remote On” or “Auto Mode”.





LEDs on Console Unit

LED Status	Control Description
Rx: Data Receiving status Tx: Data Transmitting status	Tx/ Rx: Green Flash Red (Processing)
Remote: On, Local: Off	**Console Unit** is enabled to access to the **Computer Unit** and the remote LED will: ● Emit yellow light if the **Console Unit** is taking control. ● Emit yellow light with a bit of flash red if the **Computer Unit** is taking control. Users can easily identify this status from the keyboard, in which 3 LEDs (Num, Caps and Scrol Lock) on the keyboard should be flashing. ● Emit yellow light if the **Computer Unit** is on Auto mode (the system is waiting for **Console Unit** or **Computer Unit** to take control). Users can easily identify this status from the keyboard, in which 3 LEDs (Num, Caps and Scrol Lock) on the keyboard are **NOT** flashing.

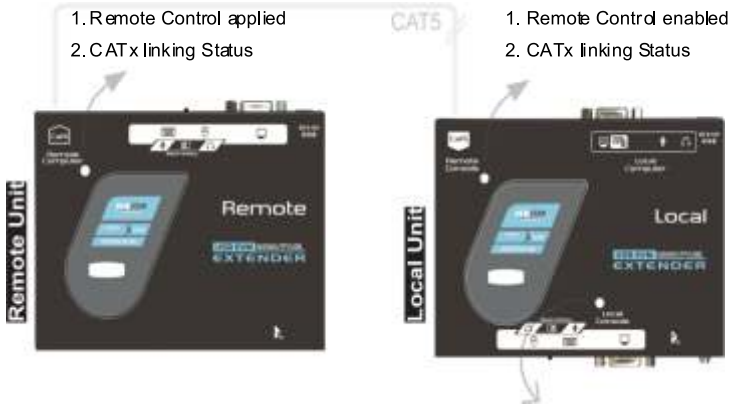
● The default status is set to Local “ON” when powering up
● The Remote LED will flash long red light if the CATx cable disconnected

Led Indicators

LEDs on Computer Unit

Model	LED Status	Control Description
Rx: Data Receiving status Tx: Data Transmitting status		Tx/ Rx: Green Flash Red (Processing)
Local unit	Remote: Off, Local: On	● **Computer Unit** controls its local PC (or cascaded **KVM Switches**). In this mode, the **Console Unit** can not take control of the **Computer Unit** remotely.
	Remote / Local Flashes alternatively (Auto Mode)*	● The system is waiting for **Console Unit** or **Computer Unit** to take control. The control priority is on the first come, first served basis
Local unit	Remote: On, Local: Off	● **Console Unit** can remotely taking control of the **Computer Unit**.

● The default status is set to Auto when powering up
● The Remote LED will flash red light if the CATx cable disconnected



Hotkey Control

A hotkey command is a short key sequence to select a computer, activate computer scan, and so forth. The **KVM Extender** interprets keystrokes for hotkeys all the time. And the built-in buzzer generates a high-pitched beep for correct hotkey command; otherwise, one short and one long beep are generated for a bad command, in which the bad key command won't be sent to the extender unit or the selected computer.

Cascade Architecture

The **KVM Extender** can be connected to the **KVM Switch** in compliance with the "**Cascade Configuration**." However, to prevent from any conflict via hotkey commands in the cascade configuration, the hotkey commands prefixed with Compatibility mode leading code which can be applied for directly accessing to the **KVM Extender**.

Mask Hotkey Switch

The hotkey commands of **KVM Switches** vary among models, which may cause hotkey errors, unwanted configurations between the **Extender Unit** and mixed types of **KVM Switches** that connect to each other. The Mask Hotkey extremely simplifies the hotkey control in cascade architecture.

Cascade Architec-ture	Mask Hotkey Switch	Hotkey Commands
NO	OFF	**The Standard Mode** (factory default). The hotkey command starts with the leading code [*left* Ctrl + *left* Ctrl] followed by one or two more keystrokes. Only the key Ctrl located on the *lower-left corner* of the keyboard is eligible for hotkey commands.
YES	OFF	**The Compatibility Mode**. Users can configure the **computer** attached to the **KVM Switch** by applying the **KVM Extender** built-in hotkey command prefixed with the cascade leading code [*left* Ctrl + *left* Ctrl + E]
YES / NO	ON	The state of the **KVM Extender** with or without connection(s) to **KVM Switch(es)**. Users can apply built-in hotkey commands of its **KVM Switch(es)** or use the **KVM Extender** alternative hotkey command with the button maneuvering Press & Hold push-button 2 sec., the LEDs blink orange, and then followed by one or two more keystrokes within 6 seconds. In later descriptions, this action will be simplified as "[BTN] (2sec.)"

Notice: The hotkey command will be *automatically time-out* if

- There is no activity detected by the keyboard *within 3 seconds* after the leading code input (when Mask Hotkey OFF) or *within 6 seconds* after [BTN] (2sec.) (when Mask Hotkey ON).
- Press the button Esc once to escape from the hotkey mode.
- Press the Push-Button once to escape from the hotkey mode and switch to either the Local or Remote mode.

Hotkey Control

Before inserting commands below for respective functionality, it's required to launch the specific [leading code] or press the [push-button] for 2 seconds and then succeed by one or two more keystrokes (commands) as the following charts show.

For **Console** and **Computer Units**

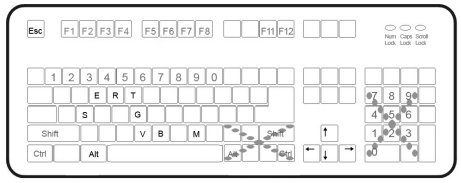
Commands	Function Descriptions
Alt + E*	***Cascading status selection*** **[both Units]** One beep: Enable **Standard Mode** **[Console Unit]** Two beeps: Enable **Compatibility Mode**, and the user at **Console Unit** accessing to the **KVM switch** that is connecting to **Computer Unit**. **[Computer Unit]** Two beeps: Enable **Compatibility Mode**, and the users at **Computer Unit** accessing to the **KVM switch** that is connecting to the **Computer Unit**.
Esc*	***Escape from hotkey mode***
F12	***Mouse resynchronized*** (for PS/2 PC)
V + 4 digits	***EDID Configuration (EDID Emulation)*** Prevent the video resolution setting from exceeding the capability of the connected display (require CPU reboot); the following options for video resolution are available for selecting: Input 4 digits with 1007 for resolution of 1024 x 0768 1210 for resolution of 1280 x 1024 1612 for resolution of 1600 x 1200 ⋮ 1912 for resolution of 1920 x 1200 1914 for resolution of 1920 x 1440 2011 for resolution of 2048 x 1152

* Not applicable for Button Maneuvering

NOTES

By default, the EDID Configuration (EDID Emulation) setting between the **Console Unit** and **Computer Unit** will follow the **Console Unit** setting after reboot. The following options for video resolution are available for selecting:

4 digits	Resolution	4 digits	Resolution
10 07	1024 x 768	**16 12**	1600 x 1200
12 08	1280 x 800	**16 10**	1680 x 1050
12 10	1280 x 1024	**19 10**	1920 x 1080
13 07	1360 x 768	**19 12**	1920 x 1200
14 09	1440 x 900	**19 14**	1920 x 1440
14 10	1440 x 1050	**20 11**	2048 x 1152
16 09	1600 x 900		



Hotkey Control

For **Computer Unit**

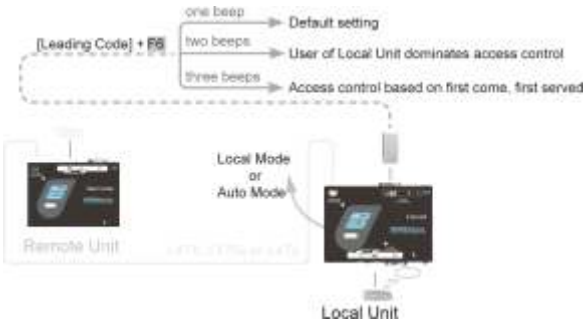
Commands	Function Descriptions
T*	***Mode selection in sequence*** Switch console control between Local Computer and Remote Computer
Alt + S*	***Reset the Unit to the factory default***
1*	***Local mode selection*** Enable the user at **Computer Unit** exclusive accessing to the PC (**KVM Switch**) that connects to **Computer Unit**. Disable the Console Unit user accessing.
2*	***Remote mode selection*** Enable the user at **Console Unit** exclusive accessing to computer (**KVM Switch**) that connects to the **Computer Unit**. (Only if the **Computer Unit** is in Remote or Auto mode). Disable **Computer Unit** user accessing to the **Computer Unit** during this mode.
3*	Auto ***Mode selection***
F3	***Latch time selection*** Auto Mode latch time setting: The extender generates 1 to 4 beeps to indicate the duration of latch time: **5, 15, 30, 60** seconds respectively.
F6	***Privacy setting enable/disable*** Alternatively restrict the output video signal of **Computer Unit**

* Not applicable for Button Maneuvering

NOTES

1. **Privacy Setting Enable**:
   Please identify the current mode (in either Local or Auto mode) by checking the **Computer Unit** LED first; then, through repeating the hotkey commands for privacy setting ([Leading Code] + F6), the **KVM Extender** generates 1 to 3 beeps to indicate the statuses of the **Computer Unit** as follows:
   A. Computer Unit in Local mode (Remote LED: Off, Local LED: On)
   - One beep: Enable the output video signal of **Computer Unit**.
   - Two or three beeps: Disable the output video signal of **Computer Unit**.

   B. Computer Unit in Auto mode (Remote / Local LED flashes alternatively)
   - One beep: Enable the output video signal of **Computer Unit**.
   - Two beeps: By triggering keyboard / mouse, users can disable the output video signal of **Computer Unit** temporarily. (The **Computer Unit** users protect the privacy for 5, 15, 30, and 60 seconds. See the above table: ***Latch time selection*** for more descriptions)
   - Three beeps: By triggering keyboard / mouse, the **Console Unit** or **Computer Unit** users can temporarily disable the output video signal of the other **Unit**. (Users protect privacy for 5, 15, 30, and 60 seconds as well)



Hotkey Control

For **Console Unit**

Part 1: Video Adjustment

The Video Adjustment function is on **Console Unit** only. To launch its hotkey command, also start with the specific [leading code] or [BTN](2sec.), and then press F11 to enter Video Adjustment Mode. After adjustment, just press Esc to escape from hotkey mode.

Commands	Function Descriptions
E	***Video Adjustment*** ***Equalizer / Gain Adjustment*** ● **Equalizer (Sharpness)**: (Num Lock LED + Caps Lock LED) Flashing 1. Press ← or → to coarse tune; 16 levels for adjustment. 2. Press and Hold Shift + ← or → to fine tune. ● **Gain (Brightness)**: (Caps Lock LED + Scroll Lock LED) Flashing 1. Press ↑ or ↓ to coarse tune; 16 levels for skew. 2. Press and Hold Shift + ↑ or ↓ to fine tune.
B (Blue) G (Green) R (Red) Choose one color at a time for adjustment	***Blue / Green / Red Color Adjustment*** Caps Lock LED Flashing 1. Press ← or → to coarse tune; 8 levels for adjustment. 2. Press and Hold Shift + ← or → to fine tune.
Esc	Escape from Video Adjustment Mode.

NOTE: Users may press [leading code] + [Esc] or just press [Esc] directly to escape from the video adjustment mode

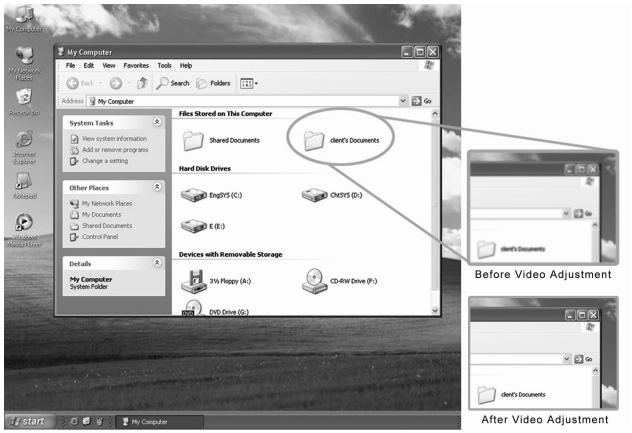
NOTES

※ **Video Adjustment** (for Console Unit Only)
The video adjustment function is required to perform before configurations begin. Please also make sure that all the system units and devices are connected properly before the video adjustment operation begin. Users at the **Console Unit** can adjust the video signal compensating to various cable length through hotkey commands. The video adjustment includes:

- Equalizer (Sharpness)
- Gain (Brightness)
- Skew (for the color **blue**, **green** and **red**)

To compensate the lengths of CAT 5 / CAT 5e / CAT 6 cable, there 16 levels on coarse tune and up to 128/256 scales on fine tune are available for adjustment on the equalizer and gain. And, there are 8 levels on coarse tune and 16/32 scales on fine tune are available for skew adjustment on **blue**, **green** and **red**.

Hotkey Control



Notice:

1. The video adjustment is available on the **Console Unit** ONLY.
2. The video adjustment is applicable only if the CATx cable is connected and the Console Unit is remotely taking control of **Computer Unit**.

Users can activate video adjustment on **Console Unit** either through *hotkeys* or *push-button*. The **Unit** is capable of hotkey control whether the Mask Hotkey is **OFF**.

While the Video Adjustment is activated, the LED **Numeric Lock** and **Scroll Lock** on the keyboard connected to the **Console Unit** will flash simultaneously at the moment. Then, users can perform the video adjustment by hotkey commands as the table shown below.

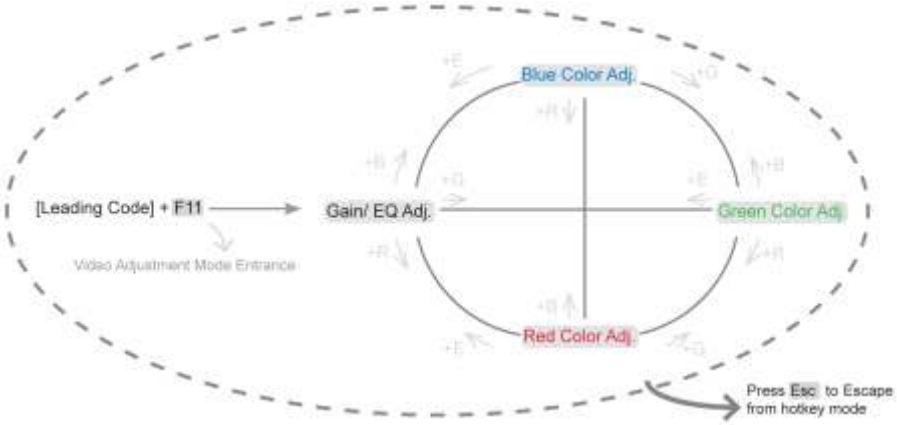
Be aware. The idle time-out of *Video Adjustment* is 30 seconds. That is, it will automatically escape from video adjustment status if no activity is detected by the keyboard within 30 seconds.

To exit the video adjustment status, three approaches are available:

1. No activity is detected by the keyboard for 30 seconds.
2. Push once the key **Esc** on the keyboard attached to the **Console Unit**.
3. Push once the push-button on the top panel of the **Console Unit**

Hotkey Control

Quick Guide for Video Adjustment



Gain/ EQ Adj.

Press ? or ? to adjust the Equalizer setting

Press ? or ? to adjust the Gain setting

Red/ Green/ Blue Color Adj.

Press ? or ? to adjust the RGB correction

Troubleshooting

If you encounter problems with the **NewStar KVM Extender** during the installation or operations, please check through this section for a possible solution. If your problem is not listed here and you can not resolve the issue, please contact your local dealer for the fastest assistances.

Troubleshooting

Symptom	Action
No video signal	♦ Verify that all the cables are qualified according to the hardware requirement section. ♦ Verify that all the cables are properly connected to their ports and are firmly seated. ♦ Use an alternative CATx cable connection between the unit of console and computer. ♦ Power down the computer. Connect the monitor directly to the computer and power up again. If the monitor does not operate correctly direct to the computer, try another monitor.
Poor video quality	♦ Use the EIA / TIA 568B industry standard CATx cable for **KVM Extender** connection. ♦ Unplug the CATx cable(s) from the **Extender**, then plug it / them back in. ♦ Perform the video quality adjustment for the length of CATx being used.
Keyboard hotkeys are inoperable when the **KVM Extender** connects with the **KVM Switch**	♦ Apply compatibility mode hotkey commands. ♦ Verify if the **Extender** has enough power.
Problems continue to occur after checking the solutions above	♦ Remove and reinstall each device, checking the connectors and sockets for bent pins or other damage.
Can't insert hotkey commands	♦ Ensure that the keyboard connectors that are correctly connected to the port. ♦ Set the Mask Hotkey to OFF (factory default)
The mouse gets inactive for a while	♦ Check the cable connected between PC and the Console Unit. ♦ Insert the hotkey "Ctrl + Ctrl + F6" with one beep to reset to factory default

Specifications

200M KVM Extender Series			
Video Resolution (Max.)			UXGA (1600 x 1200) WUXGA (1920 x 1200)
Extension Distance			200M
Unit Connection			CAT5-RJ45 Female
Console Unit Connectors	Console Side	Keyboard	USB-A x 1
		Mouse	USB-A x 1
		Monitor	HDB15-Female x 1
		Audio Jack (Speaker + Mic)	1 Set
	Computer Side	Monitor	HDB15 Female x 1 (Grey) (USB + PS/2 Interface)
		Audio Jack (Speaker + Mic)	1 Set
	Remote Control Jack (38K)		x 1 for IR Transceiver
	Mask Hotkey Switch		x 1
Computer Unit Connectors	Console Side	Keyboard	USB-A x 1
		Mouse	USB-A x 1
		Monitor	HDB15-Female x 1
		Audio Jack (Speaker + Mic)	1 Set
	Computer Side	Monitor	HDB15 Female x 1 (Grey) (USB + PS/2 Interface)
		Audio Jack (Speaker + Mic)	1 Set
	Remote Control Jack (38K)		x 1 for IR Receiver
	Mask Hotkey Switch		x 1
Front Panel LEDs (each unit) (See *LED Indicators* Chapter)			Local: x 1 / Remote: x 1
Push Button			Control Status Selection
Hotkey Control			Yes
Power Consumption (Max.)			External Power Adapter DC 9V, 600mA
Dimensions H x W x D (mm) (each unit)			22 x 140 x 100

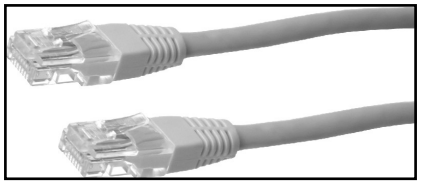
Appendices

Cable Requirements

The cable Category 5 (CAT5) terminated with RJ45 connectors is normally used for the interconnection between **Computer Unit** and **Console Unit**. It's easy to get from the local stores or call your dealers for help. Besides, CAT5e or CAT6 are applicable to the **KVM Extender**. This CAT5 cable is not provided in the standard package mainly because the cable length you required is subject to the deploying environment. However, the better the CATX cable quality, the longer the video extension, and the shorter the cable length, the higher the video resolution.

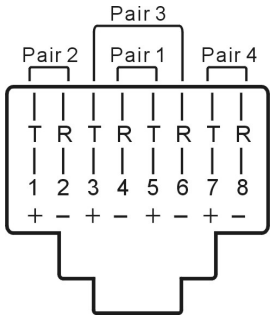
CAT5 Cable

The **KVM Extender** extends the remote access by using a piece of unshielded twisted pair (UTP) cable.



The cable must be wired in compliance with the EIA/TIA 568B industry standard

Note: *CAT5, CAT5e or CAT6 cables are applicable to the* ***KVM Extender*** *pair.*



Above diagram shows the RJ45 connector of a CAT5 cable with its metal contacts facing up.

Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY FOR DIRECT OR INDIRECT, SPECIAL, INCIDENTIAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFIT, LOSS OF BUSINESS, OR FINANCIAL LOSS WHICH MAY BE CAUSED BY THE USE OF THE PRODUCT EXCEEDS THE PRICE PAID FOR THE PRODUCT.

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Appendices

Console Unit Hotkey Control

Console Unit Hotkey Commands				Function Description
Mask Hotkey: OFF		Mask Hotkey: ON		
Hotkey	Alternative Hotkey	Hotkey	Alternative Hotkey	
[Ctrl] + [Ctrl] + [Alt+E]	N/A	N/A	N/A	***Cascading status selection*** One beep: enable **Standard Mode** (factory default) Two beeps: enable **Compatibility Mode**, and the user at **Console Unit** accessing to the **KVM switch** that is connecting to **Computer Unit**.
[Ctrl] + [Ctrl] + [Alt+S]	N/A	N/A	N/A	***Reset the Console Unit to the factory default***
[Leading Code] + [Esc]	N/A	N/A	N/A	***Escape from hotkey mode***
[Leading Code] + [T]	N/A	N/A	N/A	***Mode selection in Sequence*** switch console control between Local Computer and Remote Computer
[Leading Code] + [1]	N/A	N/A	N/A	***Local mode selection*** enable the user at **the Console Unit** accessing to the computer (KVM Switch) that connects to **the Console Unit.**
[Leading Code] + [2]	N/A	N/A	N/A	***Remote mode selection*** enable the user at the **Console Unit** exclusive accessing to computer (KVM Switch) that connects to the **Computer Unit**. (only if the **Computer Unit** is in Remote or Auto mode). Disable **Computer Unit** user accessing to the **Computer Unit** during this mode.
[Leading Code] + [F11]	[BTN] + [F11] (2 Sec.)	N/A	[BTN] + [F11] (2 Sec.)	***Video adjustment entrance*** More video quality setting can be found here.
[Leading Code] + [F12]	[BTN] + [F12] (2 Sec.)	N/A	[BTN] + [F12] (2 Sec.)	***Mouse resynchronized*** **(for PS/2 model only)**
[Leading Code] + [V] + **4 digits**	[BTN] + [V] + **4digits** (2 Sec.)	N/A	[BTN] + [V] + **4digits** (2 Sec.)	***Video synchronization*** Prevent the video resolution setting from exceeding the capability of the connected display (require CPU reboot); the following options for video resolution are available for selecting: Input 4 digits with 1007 for resolution of 1024 x 0768 1210 for resolution of 1280 x 1024 1612 for resolution of 1600 x 1200 : 1912 for resolution of 1920 x 1200 1914 for resolution of 1920 x 1440 2011 for resolution of 2048 x 1152

NOTES

1. **Standard Mode** denotes the state of the **KVM Extender** without additional connection to any **KVM switch(es)**, and **Compatibility Mode** denotes the state of the **KVM Extender** with connection to **KVM Switch(es)**.
2. **[Leading Code]** denotes: **in Standard Mode**, the hotkey sequence [*left* [Ctrl] + *left* [Ctrl]]
   in Compatibility Mode, the hotkey sequence [*left* [Ctrl] + *left* [Ctrl] + [E]]
3. **[BTN]** denotes Press and Hold the **Push Button** in the top panel for two seconds.
4. The hotkey state will be *automatically time-out*, if
   - There is no activity detected by the keyboard *within 6 seconds* after **Press and Hold** the Push Button two seconds.
   - Press the button [Esc] once to escape from the hotkey mode.
   - Press the Push Button once to escape from the hotkey mode and switch to either the Local or Remote mode.
5. By default, the Video Synchronization setting between the **Console Unit** and **Computer Unit** will follow the **Console Unit** setting after reboot. The following options for video resolution are available for selecting: Input 4 digits with
   1007 for resolution of 1024 x 0768
   1612 for resolution of 1600 x 1200
   1307 for resolution of 1360 x 0768
   1410 for resolution of 1440 x 1050
   1910 for resolution of 1920 x 1080
   1208 for resolution of 1280 x 0800
   2011 for resolution of 2048 x 1152
   1210 for resolution of 1280 x 1024
   1914 for resolution of 1920 x 1440
   1409 for resolution of 1440 x 0900
   1610 for resolution of 1680 x 1050
   1912 for resolution of 1920 x 1200
   1609 for resolution of 1600 x 0900

Video Adjustment (for Console Unit Only)

To enter the Video Adjustment Mode in Non-Cascade (Standard) Structure:

[Press *left* Ctrl + *left* Ctrl + F11]

To enter the Video Adjustment Mode in Cascade (Compatibility) Structure:

[Press *left* Ctrl + *left* Ctrl + E + F11]

While entering this mode, the LED Number Lock and Scroll Lock are flashing simultaneously at the moment. Then, users can perform the video adjustment by hotkey commands as the table shown below. Be aware, the idle time-out is 30 seconds. That is, it will automatically escape from video adjustment mode if no action is detected by the keyboard within 30 seconds.

To exit the video adjustment mode, three simplified approaches are available:

1. No action is detected by the keyboard for 30 seconds.
2. Push once the escape button Esc on the keyboard attached to the **Console Unit.**
3. Push once the push button on the top panel of the **Console Unit**

Console Unit Hotkey Commands	Function Description
E	***Equalizer / Gain Adjustment*** ● **Equalizer (Sharpness)**: (Num Lock LED + Caps Lock LED) Flashing 1. Press ← or → to coarse tune, there are 16 levels for adjusting. 2. Press and Hold Shift + ← or → to fine tune. ● **Gain (Brightness)**: (Caps Lock LED + Scroll Lock LED) Flashing 1. Press ↑ or ↓ to coarse tune, there are 16 levels for skew. 2. Press and Hold Shift + ↑ or ↓ to fine tune.
G	***Green Color Adjustment*** Caps Lock LED Flashing 1. Press ← or → to coarse tune, there are 8 levels for adjusting. 2. Press and Hold Shift + ← or → to fine tune.
B	***Blue Color Adjustment*** Scroll Lock LED Flashing 1. Press ← or → to coarse tune, there are 8 levels for adjusting. 2. Press and Hold Shift + ← or → to fine tune.
R	***Red Color Adjustment*** Num Lock LED Flashing 1. Press ← or → to coarse tune, there are 8 levels for adjusting. 2. Press and Hold Shift + ← or → to fine tune.
ESC	Escape from Video Adjustment Mode.

NOTES

1. Make sure to connect the unit and devices properly before the video adjustment
2. The video adjustment function is available on the Console Unit ONLY.
3. An alternative hotkey approach to enter Video Adjustment mode is available for users to choose as desire, in which, users can simply press the top panel push button followed by input the key F11. For more detailed information, please refer to the section "**Hotkey Commands**" and "**Alternative Hotkey Control**".

Appendices

Computer Unit Hotkey Control

Computer Unit Hotkey Commands				Function Description
Mask Hotkey: OFF		Mask Hotkey: ON		
Hotkey	Alternative Hotkey	Hotkey	Alternative Hotkey	
Ctrl + Ctrl + Alt+E	N/A	N/A	N/A	***Cascading status selection*** One beep: enable **Standard Mode** Two beeps: enable **Compatibility Mode**, and the users at **Computer Unit** accessing to the **KVM switch** that connects to the **Computer Unit.**
Ctrl + Ctrl + Alt+S	N/A	N/A	N/A	***Reset the Computer Unit to the factory default***
[Leading Code] + Esc	N/A	N/A	N/A	***Escape from hotkey mode***
[Leading Code] + T	N/A	N/A	N/A	***Mode selection in sequence*** Toggle switch to select Auto, Local On, or Remote On mode.
[Leading Code] + 1	N/A	N/A	N/A	***Local mode selection*** enable the user at **Computer Unit** exclusive accessing to the PC (**KVM Switch)** that connects to **Computer Unit.** Disables the **Console Unit** user accessing.
[Leading Code] + 2	N/A	N/A	N/A	***Remote mode selection*** enable the user at **Console Unit** exclusive accessing to the PC **(KVM Switch)** that connects to **Computer Unit.** Disables the user at the **Computer Unit** accessing to the connected **KVM Switch.**
[Leading Code] + 3	N/A	N/A	N/A	Auto ***mode selection***
[Leading Code] + F3	[BTN]+ F3 (2 Sec.)	N/A	[BTN]+ F3 (2 Sec.)	***Latch time selection*** Auto mode latch time setting, the extender generates 1 to 4 beeps to indicate the duration of latch time: **5, 15, 30, 60** seconds respectively.
[Leading Code] + F6	[BTN]+ F6 (2 Sec.)	N/A	[BTN]+ F6 (2 Sec.)	***Privacy setting enable*** * Alternatively restrict the output video signal of **Computer Unit**
[Leading Code] + F12	[BTN]+ F12 (2 Sec.)	N/A	[BTN]+ F12 (2 Sec.)	***Mouse resynchronized*** **(for PS/2 model only)**
[Leading Code] + V + 4digits	[BTN] + V + 4digits (2 Sec.)	N/A	[BTN] + V + 4digits (2 Sec.)	***Video synchronization*** Prevent the video resolution setting from exceeding the capability of the connected display (require CPU reboot); the following options of video resolution are available for selecting: Input 4 digits with 1007 for resolution of 1024 x 0768 1210 for resolution of 1280 x 1024 1612 for resolution of 1600 x 1200 : 1912 for resolution of 1920 x 1200 1914 for resolution of 1920 x 1440 2011 for resolution of 2048 x 1152

NOTES

1. **Standard Mode** denotes the state of the **KVM Extender** without additional connection to any **KVM switch(es)**, and **Compatibility Mode** denotes the state of the **KVM Extender** with connection to **KVM Switch(es).**
2. **[Leading Code]** denotes
   in **Standard Mode**, the hotkey sequence [*left* Ctrl + *left* Ctrl]
   in **Compatibility Mode**, the hotkey sequence [*left* Ctrl + *left* Ctrl + E]
3. **[BTN]** denotes **Press and Hold** the **Push Button** on the top panel for two seconds
4. After **Press and Hold** the Push Button two seconds, the hotkey state will be *automatically time-out*, if
   - There is no activity detected by the keyboard *within 6 seconds*.
   - Press the button Esc once to escape from the hotkey state.
   - Press the Push Button once to escape from the hotkey state and switch to the Auto, Local or Remote mode.